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IT and Health

13.02.2013



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Rs17822931

rs17822931, also known as c.538G>A or G180R, is a SNP in the ATP-binding cassette, sub-family C (CFTR/MRP), member 11 [ABCC11](#) gene.

[[PMID 16444273](#)] This SNP determines wet vs dry [earwax](#) as well as sweat production, it is also associated with lipid secretion. It is commonly (T;T) for asians and (C;C) for europeans and africans.

[gnxp](#) indicates this SNP influences risk of [breast cancer](#) in Japanese women. This does not hold true in Caucasian women, though.[[PMID 21655989](#)]

[reddit discussion](#)

[[PMID 19650936](#)] A strong association of axillary osmidrosis with the wet earwax type determined by genotyping of the ABCC11 gene

[[PMID 20937735](#)] The impact of natural selection on an ABCC11 SNP determining earwax type

[[PMID 16255080](#)] A haplotype map of the human genome.

[[PMID 17394018](#)] A strong association between human earwax-type and apocrine colostrum secretion from the mammary gland.

[[PMID 18037328](#)] Allele frequencies of a SNP and a 27-bp deletion that are the determinant of earwax type in the ABCC11 gene.

[[PMID 18817904](#)] Japanese population structure, based on SNP genotypes from 7003 individuals compared to other ethnic groups: effects on population-based association studies.

[[PMID 19737746](#)] Population differentiation as an indicator of recent positive selection in humans: an empirical evaluation.

[[PMID 21423094](#)] Down-regulation of ABCC11 protein (MRP8) in human breast cancer.

is a	snp
is	mentioned by
dbSNP	rs17822931
PheGenI	rs17822931
nextbio	rs17822931
hapmap	rs17822931
1000 genomes	rs17822931
hgdp	rs17822931
ensembl	rs17822931
gpubmed	rs17822931
geneview	rs17822931
scholar	rs17822931
google	rs17822931
pharmgkb	rs17822931
gwascentral	rs17822931
openSNP	rs17822931
23andMe	rs17822931
23andMe all	rs17822931
SNP Nexus	rs17822931
SNPshot	rs17822931
SNPdbe	rs17822931
MSV3d	rs17822931
Gene	ABCC11
Chromosome	16
Orientation	plus
Position	48258198
Reference	GRCh37 37.1/131
Max Magnitude	2

**dbSNP strand
orientation**

Effects of genotypes

Geno	Mag	Summary
Rs17822931(C;C)	0	wet earwax
Rs17822931(C;T)	2	wet earwax
Rs17822931(T;T)		dry earwax

Strand orientation

	<u>rs4788084</u>	<u>rs17822931</u>	<u>rs73546424</u>	
<u>Copy 1:</u>	5' . . . TCCC C TGGG . . . GGCC T GAGT . . . TGCA T GTGA . . .	3'	(+)	
	3' . . . AGGG G ACCC . . . CCGG A CTCA . . . ACGT A CACT . . .	5'	(-)	
<u>Copy 2:</u>	5' . . . TCCC C TGGG . . . GGCC C GAGT . . . TGCA A GTGA . . .	3'	(+)	
	3' . . . AGGG G ACCC . . . CCGG G CTCA . . . ACGT T CACT . . .	5'	(-)	

For the exercise:

- 23andMe reports positive strand
- SNPedia (and dbSNP) uses either positive or negative
- If negative strand genotypes are reported then you need to convert to positive:

C <-> G

A <-> T

Ramneek

- Dark hair and brown eyes
- Vegetarian. Loves broccoli and does not think it tastes particularly bitter
- Doesn't drink coffee late afternoon/evening as he cannot fall asleep at night if he does

Agata

- Blond hair and blue-grey-green eyes
- Not a big fan of cabbage, broccoli and other bitter tasting food
- If she drinks coffee, it is with sugar and milk and never drinks it late afternoon/evening as she cannot fall asleep at night if she does
- Doesn't like to run at all but should perhaps try out sports where sprinting is useful

Valborg

- Red hair and blue-grey-green eyes
- Likes bitter foods, such as dark chocolate, grapefruit and broccoli
- Doesn't mind drinking coffee in the evening
- Doesn't run very fast

Arcadio

- Dark hair and brown eyes
- He thinks that cabbage and broccoli taste quite bitter, but he likes it despite of this
- Does not drink coffee at all
- Is a sprinter

Rachita

- Dark hair and brown eyes
- Can't eat broccoli because she dislikes it so much
- Never drinks coffee in the evenings
- Is allergic to grass pollen and has had episodes of hay fever

Txema

- Dark hair and brown-green eyes
- Dislikes broccoli and other bitter tastes
- Everytime is a good time for coffee
- Is an endurance runner
- Has allergy to grass pollen and hayfever

	Person A		Person B		Person C		Person D		Person E		Person F	
rs number	gt	possible trait	gt	possible trait	gt	possible trait	gt	possible trait	gt	possible trait	gt	possible trait
rs1667394	TT		CC		TT		CC		CC		CC	
rs1805007	CT		CC		TT		CC		CC		CC	
rs12913832	GG		AA		GG		AA		AG		AA	
rs762551	AC		AA		AA		AC		AA		CC	
rs713598	CG		CG		GG		CG		CG		GG	
rs1815739	CC		CC		TT		CT		TT		CT	
rs7775228*	TT		TT		TT		CC		CC		TT	
rs2155219*	GG		GG		GG		GT		TT		GG	

*Look for 23andMe report on SNPedia page